



04-20-06

1800/3

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Benjamin A. Haskell et al. Examiner: William D. Coleman
Serial No.: 10/537,644 Group Art Unit: 2823
Filed: June 6, 2005 Docket: G&C 30794.93-US-WO
Title: GROWTH OF REDUCED DISLOCATION DENSITY NON-POLAR GALLIUM NITRIDE BY
HYDRIDE VAPOR PHASE EPITAXY

CERTIFICATE OF MAILING UNDER 37 CFR 1.10

'Express Mail' mailing label number: EV 530998907 US

Date of Deposit: April 19, 2006

I hereby certify that this paper or fee is being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By:

Barbara Senty

Name: Barbara Senty

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

We are transmitting herewith the attached:

- ☒ Transmittal sheet, in duplicate, containing a Certificate of Mailing under 37 CFR 1.10.
- ☒ Information Disclosure Statement and Form PTO-1449.
- ☒ Cited Reference(s).
- ☒ Return postcard.

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers, if appropriate.

Please charge all fees to Deposit Account No. 50-0494 of Gates & Cooper LLP. A duplicate of this paper is enclosed.

Customer Number 22462

GATES & COOPER LLP

Howard Hughes Center
6701 Center Drive West, Suite 1050
Los Angeles, CA 90045
(310) 641-8797

By:

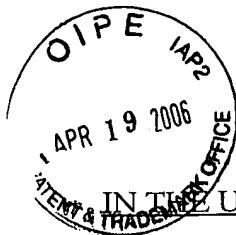
George H. Gates

Name: George H. Gates

Reg. No.: 33,500

GHG/bjs

(PTO TRANSMITTAL - GENERAL)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Benjamin A. Haskell et al. Examiner: William D. Coleman
Serial No.: 10/537,644 Group Art Unit: 2823
Filed: June 6, 2005 Docket: G&C 30794.93-US-WO
Title: GROWTH OF REDUCED DISLOCATION DENSITY NON-POLAR
GALLIUM NITRIDE BY HYDRIDE VAPOR PHASE EPITAXY

CERTIFICATE OF MAILING UNDER 37 CFR 1.10

'Express Mail' mailing label number: EV 530998907 US

Date of Deposit: April 19, 2006

I hereby certify that this paper or fee is being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By:

Barbara Senty

Name: Barbara Senty

INFORMATION DISCLOSURE STATEMENT(37 C.F.R. §1.97(c))

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

With regard to the above-identified application, the items of information listed on the enclosed Form 1449 are brought to the attention of the Examiner.

Pursuant to 37 C.F.R. §1.97(c), please charge the amount of \$180.00 to Deposit Account No. 50-0494 of Gates & Cooper LLP for having the items of information listed considered after the mailing date of a first Office Action on-the-merits, but before the mailing date of either a final action under 37 C.F.R. § 1.113, or a Notice of Allowance under 37 C.F.R. § 1.311.

In accordance with 37 C.F.R. §1.98(a)(2), a copy of each foreign patent document and each non-patent document listed on the enclosed Form 1449 is provided.

No representation is made that a reference is "prior art" within the meaning of 35 U.S.C. §§ 102 and 103 and Applicants reserve the right, pursuant to 37 C.F.R. § 1.131 or otherwise, to establish that

04/24/2006 WASFAW1 00000045 500494 10537644

01 FC:1806

180.00 DA

the reference(s) are not "prior art". Moreover, Applicants do not represent that a reference has been thoroughly reviewed or that any relevance of any portion of a reference is intended.

Consideration of the items listed is respectfully requested. Pursuant to the provisions of M.P.E.P. 609, it is requested that the Examiner return a copy of the attached Form 1449, marked as being considered and initialed by the Examiner, to the undersigned with the next official communication.

Please direct any response or inquiry to the below-signed attorney at (310) 641-8797.

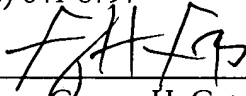
Respectfully submitted,

GATES & COOPER LLP
Attorneys for Applicant(s)

Howard Hughes Center
6701 Center Drive West, Suite 1050
Los Angeles, California 90045
(310) 641-8797

Date: April 19, 2006

GHG/bjs

By: 
Name: George H. Gates
Reg. No.: 33,500

Form 1449* INFORMATION DISCLOSURE STATEMENT IN AN APPLICATION FOR A PATENT	Docket Number: G&C 30794.93-US-WO	Application Number: 10/537,644
	Applicant: Benjamin A. Haskell et al.	
	Filing Date: June 6, 2005	Group Art Unit: 2823

U.S. PATENT DOCUMENTS						
EXAMINER INITIAL	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	6,900,070	05/31/2005	Craven et al.			
	6,645,295	11/11/2003	Koike et al.			
	6,635,901	10/21/2003	Sawaki et al.			
	6,623,560	09/2003	Biwa et al.			
	6,602,763	08/05/2003	Davis et al.			
	6,586,316	07/01/03	Tsuda et al.			
	6,582,986	06/24/2003	Kong et al.			
	6,441,391	08/27/2002	Ohno et al.			
	6,413,627	07/02/2002	Motoki et al.			
	6,350,666	02/26/2002	Kryliouk			
	6,268,621	07/2001	Emmi et al.			
	6,180,270	01/30/2001	Cole et al.			
	6,177,292	01/23/2001	Hong et al.			
	6,156,581	12/2000	Vaudo et al.			
	6,153,010	11/2000	Kiyoku et al.			
	6,051,849	04/2000	Davis et al.			
	2004/0108513	06/10/2004	Narukawa et al.			
	2003/0114017	06/2003	Wong et al.			
	2002/0047113	04/25/2002	Ohno et al.			
	2001/0029086	10/11/2001	Ogawa et al.			

EXAMINER:	DATE CONSIDERED:
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.	

Form 1449* INFORMATION DISCLOSURE STATEMENT IN AN APPLICATION	Docket Number: G&C 30794.93-US-WO	Application Number: 10/537,644
	Applicant: Benjamin A. Haskell et al.	
	Filing Date: June 6, 2005	Group Art Unit: 2823

FOREIGN PATENTS							
	DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	WO 2004/061969	07/22/2004	PCT				
	WO 2005/064643	07/14/2005	PCT				
	WO 2004/061909	07/22/2004	PCT				
	0 942 459	09/15/1999	Europe				
	2001 257166	09/21/2001	Japan (Abstract only)				
	2002 076329	03/15/2002	Japan (Abstract only)				
	2002 076521	03/15/2002	Japan (Abstract only)				
NON-PATENT DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	1	Wang, F. et al., "Crystal Tilting in the Epitaxial Laterally Overgrown GaN Films on Sapphire Substrate by Hydride Vapor Phase Epitaxy", Solid State and Integrated-Circuit Technology Proceedings, 6 th International Conference, October 2001, Vol. 2, pp. 1998-1201.					
	2	Maruska, H.P. et al., "Development of 50 mm Diameter Non-Polar Gallium Nitride Substrates for Device Applications", International Conference on Indium Phosphide and Related Materials, 16 May 2003, pp. 567-570.					
	3	Craven, M.D., et al., "Structural characterization of nonpolar (1120) <i>a</i> -plane GaN thin films grown on (1102) <i>r</i> -plane sapphire", Applied Physics Letters, Vol. 81, No. 3, 15 July 2002, pages 469-471, XP002250684					
	4	Dupuis, R.D., et al., "Selective-area and lateral epitaxial overgrowth of III-N materials by metalorganic chemical vapor deposition", Journal of Crystal Growth, Vol. 195, No. 1-4, 15 December 1998, pages 340-345, XP004154285					
	5	Grzegory, I., et al., "Seeded growth of GaN at high N ₂ pressure on (0 0 0 1) polar surfaces of GaN single crystalline substrates", Materials Science in Semiconductor Processing, Vol. 4, No. 6, December 2001, pages 535-541, XP004345737					
	6	Liu, L. et al., "Substrates for gallium nitride epitaxy", Materials Science and Engineering R, Reports: A Review Journal, Vol. 37, No. 3, 30 April 2002, pages 61-127, XP004349792					
	7	Marchand, H., et al., "Mechanisms of lateral epitaxial overgrowth of gallium nitride by metalorganic chemical vapor deposition", Journal of Crystal Growth, Vol. 195, No. 1-4, 15 December 1998, pages 328-332, XP004154283					
	8	Mills, Alan, "Wide-bandgap emitters continue to improve", III-Vs Review, Vol. 13, No. 3, May 2000, pages 23-24, 26, 28-30, XP004200697					
	9	Sasaki, T., et al., "Substrate-orientation dependence of GaN single-crystal films grown by metalorganic vapor-phase epitaxy", Journal of Applied Physics, American Institute of Physics, Vol. 61, No. 7, 01 April 1987, pages 2533-2540, XP000820119					
	10	Sun, Chien-Jen, et al., "Comparison of the physical properties of GaN thin films deposited on (0001) and (0112) sapphire substrates", Applied Physics Letters, Vol. 63, No. 7, 1993, pages 973-975, XP002251480					
	11	Amano, H., et. al., "Metalorganic vapor phase epitaxial growth of a high quality GaN film using an AlN buffer layer" Appl. Phys. Lett. 48 (5), 3 February 1986, pp 353-355					

EXAMINER:	DATE CONSIDERED:
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.	

Form 1449* INFORMATION DISCLOSURE STATEMENT IN AN APPLICATION	Docket Number: G&C 30794.93-US-WO	Application Number: 10/537,644
	Applicant: Benjamin A. Haskell et al.	
	Filing Date: June 6, 2005	Group Art Unit: 2823

NON-PATENT DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
12	Ambacher, O., et. al., "Two-dimensional electron gases induced by spontaneous and piezoelectric polarization charges in N- and Ga-face AlGaIn/GaN heterostructures" J. Appl. Phys., 85 (6), 15 March 1999, pp. 3222-3233	
13	Botcher, T., et al., "The role of high-temperature island coalescence in the development of stresses in GaN films" Appl. Phys. Lett. 78 (14), 2 April 2001, pp. 1976-1978	
14	Brandt, O., et al., "Determination of strain state and composition of highly mismatched group-III nitride heterostructures by x-ray diffraction" J. Phys. D: Appl. Phys. 35 (2002), pp. 577-585	
15	Craven, M.D., et al., "Characterization of a-Plane GaN/(Al,Ga)N Multiple Quantum Wells Grown via Metalorganic Chemical Vapor Deposition" Jpn. J. Appl. Phys. Vol. 42, (2003), pp. L235-L238	
16	Craven, M.D., et al., "Threading dislocation reduction via laterally overgrown nonpolar (1120) a-plane GaN" Appl. Phys. Lett. 81 (7), 12 August 2002, pp. 1201-1203	
17	Dovidenko, K., et. al., "Characteristics of stacking faults in AlN thin films J. Appl. Phys. 82 (9), 1 November 1997, pp. 4296-4299	
18	Eastman, L.F., "The Toughest Transistor Yet" IEEE Spectrum 39 (5), May 2002, pp. 28-33	
19	Eddy, C.R., Jr., "Growth of gallium nitride thin films by electron cyclotron resonance microwave plasma-assisted molecular beam epitaxy" J. Appl. Phys. 73 (1), 1 January 1993, pp. 448-455	
20	Etzkorn, E.V., et al., "Cracking of GaN films" J. Appl. Phys. 89 (2), 15 January 2001, pp. 1025-1034	
21	Freitas, J. A., Jr., et al., "Optical characterization of lateral epitaxial overgrown GaN layers" Appl. Phys. Lett. 72 (23), 8 June 1998, pp. 2990-2992	
22	Grandjean, N., et al., "Built-in electric-field effects in wurtzite AlGaIn quantum wells" J. Appl. Phys. 86 (7), 1 October 1999, pp. 3714-3720	
23	Heying, B., et al., "Role of threading dislocation structure on the x-ray diffraction peak widths in epitaxial GaN films" Appl. Phys. Lett. 68 (5), 29 January 1996, pp. 643-645	
24	I. J. Seo, et. al., "Reduction of oscillator strength due to piezoelectric fields in GaN/Al _x Ga _{1-x} N quantum wells" Phys. Rev. B. 57 (16), 15 April 1998-II, pp. R9435-R9438.	
25	Iwata, K., et. al., "Gas Source Molecular Beam Epitaxy Growth of GaN on C-, A-, R-, and M-Plane Sapphire and Silica Glass Substrates" Jpn. J. Appl. Phys. Vol. 36 (1997), pp. L 661-L664	
26	Kapolnek, D., et al., "Anisotropic epitaxial lateral growth in GaN selective area epitaxy" Appl. Phys. Lett. 71 (9), 1 September 1997, pp. 1204-1206.	
27	Langer, R., et. al., "Giant electric fields in unstrained GaN single quantum wells" Appl. Phys. Lett., 74 (25), 21 June 1999, pp. 3827-3829	
28	Lefebvre, P. et al., "High internal electric field in a graded-width InGaIn/GaN quantum well: Accurate determination by time-resolved photoluminescence spectroscopy" Appl. Phys. Lett. 78 (9), 26 February 2001, pp. 1252-1254	
29	Lefebvre, P., et al., "Time-resolved photoluminescence as a probe of internal electric fields in GaN-(GaAl)N quantum wells" Phys. Rev. B. 59 (23), 15 June 1999-I, pp. 15363-15367	
30	Lei, T., "Heteroepitaxy, polymorphism, and faulting in GaN thin films on silicon and sapphire substrates" J. Appl. Phys. 74 (7), 1 October 1993, pp. 4430-4437	
31	Leroux, M., "Barrier-width dependence of group-III nitrides quantum-well transition energies" Phys. Rev. B. 60 (3), 15 July 1991-I, pp. 1496-1499	

EXAMINER:	DATE CONSIDERED:
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.	

Form 1449* INFORMATION DISCLOSURE STATEMENT IN AN APPLICATION	Docket Number: G&C 30794.93-US-WO	Application Number: 10/537,644
	Applicant: Benjamin A. Haskell et al.	
	Filing Date: June 6, 2005	Group Art Unit: 2823

NON-PATENT DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
32	Leszczynski, M., et. al., "Lattice parameters of gallium nitride" Appl. Phys. Lett. 69 (1), 1 July 1996, pp. 73-75	
33	Marchand, H., et al., "Microstructure of GaN laterally overgrown by metalorganic chemical vapor deposition" Appl. Phys. Lett. 73 (6), 10 August 1998, pp. 747-749	
34	Marchand, H., et al., "Atomic force microscopy observation of threading dislocation density reduction in lateral epitaxial overgrowth of gallium nitride by MOCVD" MRS Internet J. Nitride Semicond. Res. 3, 3 (1998), pp. 1-7	
35	Metzger, Th., et. al., "X-Ray Diffraction Study of Gallium Nitride Grown by MOCVD" Physica status solidi (b) 193, 1996, pp. 391-7	
36	B. Monemar, et. al., "Properties of Zn-doped VPE-grown GaN.II.Luminescence data in relation to doping conditions" J. Appl. Phys. 51 (1), January 1980, pp. 625-639	
37	Moustakas, T.D., et. al., "Growth of GaN by ECR-assisted MBE" Physica B 185, 1993, pp. 36-49	
38	Motoki, J., et al., "Preparation of Large Freestanding GaN Substrates by Hydride Vapor Phase Epitaxy Using GaAs as a Starting Substrate" Jpn. J. Appl. Phys. Vol. 40 (2), (2001), pp. L140-L143	
39	Nakamura, S, et. al., "Violet InGaN/GaN/AlGaIn-Based Laser Diodes Operable at 50°C with a Fundamental Transverse Mode" Jpn. J. Appl. Phys. 38 (2), 1999, pp. L226-L229	
40	Nam, O., et. al., "Lateral epitaxy of low defect density GaN layers via organometallic vapor phase epitaxy" Appl. Phys. Lett. 71 (18), 3 November 1997, pp. 2638-2640	
41	Nataf, G., et. al., "Lateral overgrowth of high quality GaN layers on GaN/Al ₂ O ₃ patterned substrates by halide vapour-phase epitaxy" J. of Crystal Growth (192), 20 February 1998, pp. 73-78	
42	Ng, H. M., "Molecular-beam epitaxy of GaN/Al _{1-x} Ga _x N multiple quantum wells on R-plane (1012) sapphire substrates" Appl. Phys. Lett. 80 (23), 10 June 2002, pp. 4369-4371	
43	Nishida, T., et al., "Ten Milliwatt Operation of an AlGaIn-Based Light Emitting Diode Grown on GaN Substrate" Phys. Stat. Sol. (a) 188 (1), 2001, pp. 113-116	
44	Park, S., et. al., "Spontaneous polarization effects in wurtzite GaN/AlGaIn quantum wells and comparison with experiment" Appl. Phys. Lett. 76 (15), 10 April 2000, pp. 1981-1983	
45	Park, J., et. al., "Selective-area and lateral epitaxial overgrowth of III-N materials by metal organic chemical vapor deposition" Appl. Phys. Lett. 73 (3), 20 July 1998, pp. 333-335	
46	Parillaud, O., et al., "Localized Epitaxy of GaN by HVPE on patterned Substrates" MRS Internet J. Nitride Semicond. Res. 3 (40), 19 October 1998, pp. 1-9	
47	Paskova, T., et al., "Defect Reduction in HVPE Growth of GaN and Related Optical Spectra" Phys. Stat. Sol. (a) 183, (2001), pp. 197-203	
48	Rosner, S.J., et. al., "Cathodoluminescence mapping of epitaxial lateral overgrowth in gallium nitride" Appl. Phys. Lett. 74 (14), 5 April 1999, pp. 2035-2037	
49	Sakai, A., et al., "Self-organized propagation of dislocations in GaN films during epitaxial lateral overgrowth" Appl. Phys. Lett. 76 (4), 24 January 2000, pp. 442-444	
50	Sano, M., et al., "Epitaxial Growth of Undoped and Mg-Doped GaN" Jpn. J. of Appl. Phys. 15 (10), October 1976, pp. 1943-1950	
51	Shintani, A., et al. "Light Emitting Patterns of Gallium Nitride Electroluminescence" J. Electrochem. Soc. 123 (10), October 1976, pp. 1575-1578	
52	Smorchkova, I.P., et. al., "Polarization-induced charge and electron mobility in AlGaIn/GaN heterostructures grown by plasma-assisted molecular-beam epitaxy" J. Appl. Phys. 86 (8), 15 October 1999, pp. 4520-4526	

EXAMINER:	DATE CONSIDERED:
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.	

Form 1449* INFORMATION DISCLOSURE STATEMENT IN AN APPLICATION	Docket Number: G&C 30794.93-US-WO	Application Number: 10/537,644
	Applicant: Benjamin A. Haskell et al.	
	Filing Date: June 6, 2005	Group Art Unit: 2823

NON-PATENT DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
53	Takeuchi, T., et. al., "Determination of piezoelectric fields in strained GaInN quantum wells using the quantum-confined Stark effect" Appl. Phys. Lett. 73 (12), 21 September 1998, pp. 1691-1693	
54	Takeuchi, T., et. al., "Quantum-Confined Stark Effect due to Piezoelectric Fields in GaInN Strained Quantum Wells" Jpn. J. Appl. Phys. Vol. 36, 1 April 1997, pp. L382-385	
55	Tan, I-H., et. al., "A self consistent solution of Schrodinger-Poisson equations using a nonuniform mesh" J. Appl. Phys. 68 (8), 15 October 1990, pp. 4071-4076	
56	Tsuchiya, H., et al., "Growth condition dependence of GaN crystal structure on (0 0 1)GaAs by hydride vapor-phase epitaxy" J. of Crystal Growth (189/190), 1998, pp.395-400	
57	Waltereit, P., et. al., "Nitride semiconductors free of electrostatic fields for efficient white light-emitting diodes" Nature Vol. 406, 24 August 2000, pp. 865-868	
58	Wright, A.F., "Elastic properties of zinc-blende and wurtzite AlN, GaN, and InN" J. Appl. Phys. 82 (6), 15 September 1997, pp. 2833-2839	
59	Yablonovitch, E., et. al., "Reduction of Lasing Threshold Current Density by the Lowering of Valence Band Effective Mass" J. of Lightwave Tech. Vol. LT-4 (5), May 1986, pp. 504-506	
60	Zheleva, T., et. al., "Dislocation density reduction via lateral epitaxy in selectively grown GaN structures" Appl. Phys. Lett. 71 (17), 27 October 1997, pp. 2472-2474	
61	Zheleva, T., et. al., "Pendo-epitaxy- A new approach for lateral growth of gallium nitride structures" MRS Internet J. Nitride Semicond. Res. 4S1, G3.38 (1999)	
62	Yu, Z., et. al., "Epitaxial lateral overgrowth of GaN on SiC and sapphire substrates" MRS Internet J. Nitride Semicond. Res. 4S1, G4.3 (1999)	
63	Kinoshita et al., "Emission Enhancement of GaN/AlGaIn Single-Quantum-Wells Due to Screening of Piezoelectric Field", MRS Internet J. Nitride Semicond. Res. 5, W11.32 (2000)	
64	Leroux et al., "Quantum confined Stark effect due to built-in internal polarization fields in (Al,Ga)N/GaN quantum wells", Phys. Rev. B 58, R113371 (1998)	
65	Kuokstis et al., "Polarization effects in photoluminescence of C- and M-plane GaN/AlGaIn multiple quantum wells", Appl. Phys. Lett. 81, 4130 (2002)	
66	Bhattacharyya et la., " Comparative study of GaN/AlGaIn MQWs grown homoepitaxially on (1 1 0 0) and (0001) GaN", Crystal Growth 251, 487 (2003)	
67	Bernardini et al., "Spontaneous polarization and piezoelectric constants of III-V nitrides", Phys. Rev. B 56, R10024 (1997)	
68	Langer et al., "Giant electric fields in unstrained GaN single quantum wells", Appl. Phys. Lett. 74, 3827 (1999)	
69	Traetta et al., "Effects of the spontaneous polarization and piezoelectric fields on the luminescence spectra of GaN/Al _{0.15} Ga _{0.85} N quantum wells", Physica E 7, 929-933 (2000)	
70	Keller et al., "Metalorganic Chemical Vapor Deposition Growth of High Optical Quality and High Mobility GaN", J. Electronic Materials Vol. 24, pgs 1707-1709 (1995)	
71	Chakraborty et al., "Nonpolar InGaIn/GaN emitters on reduced-defect lateral epitaxially overgrown a-plane GaN with drive-current-independent electroluminescence emission peak", Applied Physics Letters Vol. 85 No. 22, (11/29/04)	
72	Chitnis et al., "Visible light-emitting diodes using a-plane GaN-InGaIn multiple quantum wells over r-plane sapphire", Applied Physics Letters Vol. 84 No. 18 (05/03/04)	
73	Gardner et al., "Polarization anisotropy in the electroluminescence of m-plane InGaIn-GaN multiple-quantum-well light-emitting diodes", Applied Physics Letters 86, 111101 (2005)	
74	Vanfleet et al., "Defects in m-face GaN films grown in halide vapor phase epitaxy on LiAlO ₂ ", Applied Physics Letters, Vol. 83 No. 6 (08/11/03)	

EXAMINER:	DATE CONSIDERED:
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.	

Form 1449* INFORMATION DISCLOSURE STATEMENT IN AN APPLICATION	Docket Number: G&C 30794.93-US-WO	Application Number: 10/537,644
	Applicant: Benjamin A. Haskell et al.	
	Filing Date: June 6, 2005	Group Art Unit: 2823

NON-PATENT DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
75	Haskell et al., "Defect reduction in (1120) a-plane gallium nitride via lateral epitaxial overgrowth by hydride vapor-phase epitaxy", Applied Physics Letters, Vol. 83 No. 4 (07/28/03)	
76	Yue Jun Sun et al., "In surface segregation in M-plane (In,Ga)N/GaN multiple quantum well structures", Applied Physics Letters, Vol. 83 No. 25 (12/22/03)	
77	Bigenwald et al., "Confined Excitons in GaN-AlGa _N Quantum Wells", Phys. Stat. Sol. (b) 216, 371 (1999)	
78	Im, J.S. et al., "Reduction of oscillator strength due to piezoelectric fields in GaN/Al _x Ga _{1-x} N quantum wells", Phys. Rev. B, Vol. 57 No. 16 (04/15/98)	
79	Nam, Ok-Hyun et al., "Lateral epitaxy of low defect density GaN layers via organometallic vapor phase epitaxy", Appl. Phys. Lett. 71 (18) (11/03/97)	
80	Zheleva et al., "Dislocation density reduction via lateral epitaxy in selectively grown GaN structures", Appl. Phys. Lett. 71 (17) (10/27/97)	
81	Yue Jun Sun et al., "Nonpolar In _x Ga _{1-x} N/GaN(1100) multiple quantum wells grown on γ-LiAlO ₂ (100) by plasma-assisted molecular-beam epitaxy", Physical Review B 67 (2003)	
82	Takeuchi et al., "Theoretical Study of Orientation Dependence of Piezoelectric Effects in Wurtzite Strained GaInN/GaN Heterostructures and Quantum Wells", Jpn. J. Appl. Phys. Vol. 39, pp. 413-416, Part 1, No. 2A (February 2000)	
83	Grandjean et al., "Self-limitation of AlGa _N /GaN quantum well energy by built-in polarization field", Applied Physics Letters, Vol. 74, No. 16 (April 19, 1999)	
84	Amano et al., "Stress and Defect Control in GaN Using Low Temperature Interlayers", Jpn. J. Appl. Phys., Vol. 37 (1998)	
85	Mukai et al., "Ultraviolet InGa _N and GaN Single-Quantum-Well-Structure Light-Emitting Diodes Grown on Epitaxially Laterally Overgrown GaN Substrates", Jpn. J. Appl. Phys., Vol. 38, pp. 5735-5739 (1999)	
86	Miller et al., "Electric field dependence of optical absorption near the band gap of quantum-well structures", The American Physical Society, Physical Review B, Vol. 32, No. 2 (July 15, 1985)	
87	Pearnton et al., "GaN: Processing, defects, and devices", Applied Physics Reviews, Journal of Applied Physics, Vol. 86, No. 1 (July 1, 1999)	
88	S. Nakamura and G. Fasol, The Blue Laser Diode, (Springer, Heidelberg, 1997), pp. 160-178	

EXAMINER:	DATE CONSIDERED:
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form for next communication to the Applicant.	